Current Electricity

1. **Assertion (A):** When constant current is passing through a conductor of variable area of cross section, electric field inside conductor is inversely proportional to cross sectional area.

Reason (R): Microscopic form of Ohm's law is $\vec{E} = \rho\vec{J}$. where $\vec{E}$ stands for electric field, ρ stands for resistivity and $\vec{J}$ stands for current density.

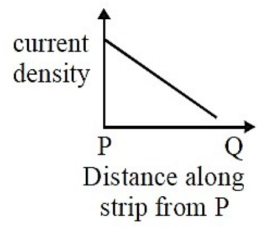
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

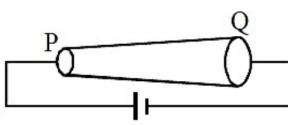
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

2. An electric current flows along strip PQ of a metallic conductor.





Assertion (A): The resistance per unit length of the strip is constant.

Reason (R): The current density in the strip varies as shown in the graph.

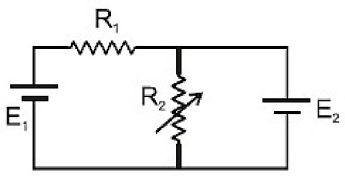
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

3. **Assertion (A):** In the circuit shown both cells are ideal and of fixed emf, the resistor of resistance R_1 has fixed resistance and the resistance of resistor R_2 can be varied (but the value of R_2 is not zero). Then the electric power delivered to resistor of resistance R_1 is independent of value of resistance R_2.



Reason (R): If potential difference across a fixed resistance is unchanged, the power delivered to the resistor remains constant.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

4. **Assertion (A):** The current density $\vec{J}$ at any point in ohmic resistor is in direction of electric field $\vec{E}$ at that point.

Reason (R): A point charge when released from rest in a region having only electrostatic field always moves along electric lines of force.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

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5. **Assertion (A):** The rate at which energy is being delivered to a light bulb is lower after it has been on for a few seconds than just after it is turned on.
Reason (R): As the filaments warms up, its resistance rises and the current falls.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

6. **Assertion (A):** Ohm's law holds only for small currents in metallic wire not for high currents.
Reason (R): For metallic wire resistance increases with increase in temperature.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

7. **Assertion (A):** The drift speed of electrons in metals is small (in the order of a few mm/s) and the charge of an electron is also very small $(= 1.6 \times 10^{-19}C)$, yet we can obtain a large current in a metal.
Reason (R): At room temperature, the thermal speed of electron is very high (about 10^7 times the drift speed).
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

8. **Assertion (A):** If a resistor is connected to a battery, the current decreases when the temperature increases.
Reason (R): For most of the resistors, resistance increases with increase in temperature.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

9. **Assertion (A):** When two conducting wires of different resistivity having same cross section area are joined in series, the electric field in them would be equal when they carry current.
Reason (R): When wires are in series they carry equal current.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

10. **Assertion (A):** In a Meter Bridge experiment, null point for an unknown resistance is measured. Now, the unknown resistance is put inside an enclosure maintained at a higher temperature. The null point can be obtained at the same point as before by decreasing the value of the standard resistance.
Reason (R): Resistance of a metal decreases with increase in temperature.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

11. **Assertion (A):** Two identical cells are connected in (a) series (b) parallel then maximum power transferred to the load is same in both cases.
Reason (R): Value of load resistance for maximum power transfer for series and parallel combination of cells are same
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

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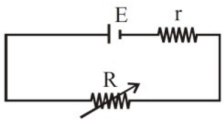
12. **Assertion (A):** Kirchoff's loop law represents conservation of energy
Reason (R): If the sum of "Potential Differences" around a closed loop is not zero, unlimited energy could be gained by repeatedly carrying a charge around a loop
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

13. **Assertion (A):** 

total power consumed in circuit is maximum when current in circuit is maximum.
Reason (R): Current in circuit is maximum when power consumed by load is maximum.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

14. **Assertion (A):** As drift velocity increases current flowing through conductor decreases.
Reason (R): Current flowing through conductor is inversely proportional to drift velocity
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

15. **Assertion (A):** Drift velocity of e^- in a metallic wire will decrease if temperature of wire is increased
Reason (R): On increasing temperature conductivity of metallic wire decreases.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

16. **Assertion (A):** In $R = R_0(1 + \alpha\Delta T)$ when temp. is increased from 27°C to 227°C resistance increases from 100 to 150 Ω this implies $\alpha = 2.5 \times 10^{-3}$/°C.
Reason (R): $R = R_0(1 + \alpha\Delta T)$ is valid only when change in temp (ΔT) is very small i.e. $\Delta R = (R - R_0) << R_0$.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

17. **Assertion (A):** Potential difference across the battery can be greater than its emf
Reason (R): When current is taken from battery $V = \varepsilon - ir$
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

18. **Assertion (A):** Current flows in conductor only when there an electric field is applied to a conductor
Reason (R): Drift velocity of e^- decreases in presence of electric field
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

19. **Assertion (A):** When a battery is supplying power to a circuit, work done by electrostatic force on electrolyte ions inside the battery is +ve.
Reason (R): Electric field is directed from positive to –ve electrode inside a battery.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

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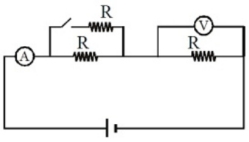
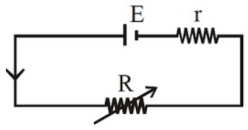
20. **Assertion (A):-** 

when switch S is ON reading of ammeter and voltmeter will increase.
Reason (R): In parallel combination net resistance will reduce.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

21. **Assertion (A):** 

In circuit R is variable, value of I is maximum when r = R
Reason (R): At r = R power produced across R is minimum.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

22. **Assertion (A):** 

If $V_b > V_a$ current flows from b to a.
Reason (R): Direction of current inside battery is always from –ve to +ve terminal.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

23. **Assertion (A):** Resistance of ammeter is less than resistance of milliammeter, (If made from same galvanometer)
Reason (R): Value of shunt resistance in case of ammeter is more than a milliammeter.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

24. **Assertion (A):** When a wire is stretched, then its resistance changes directly as square of its length.
Reason (R): When wire is stretched its thickness/ radius decreases and volume remains constant.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

25. **Assertion (A):** The brightness of light bulb in a room decreases when heavy current appliance is switched on.
Reason (R): There will be no change in brightness of bulb if source is ideal and for non ideal source voltage drop across bulb decreases.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

26. **Assertion (A):** 100 W, 60 W and 20 W bulbs, each marked 220 volt, are connected in series with a voltage source, then 20 W bulb gives maximum illumination.
Reason (R): Resistance of filament 20 W bulb is maximum.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

27. **Assertion (A):** A car engine can be started more easily on a warm day than on a cold day.
Reason (R): EMF of battery is more on a cold day.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

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28. **Assertion (A):** The electric bulb glows immediately when switch is on.

Reason (R): The drift velocity of electrons in a metallic wire is very high (near speed of light).

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

29. **Assertion (A):** Though the same current flows through the line wires and the filament of the bulb but the rate of heat produced in the filament is much higher than that in line wires.

Reason (R): The filament of bulbs is made of a material of high resistance and low melting point.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

30. **Assertion (A):** Electrolyte are more conducting than metal.

Reason (R): Ions moves faster than electrons

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

31. **Assertion (A):** A voltmeter is an inherently inaccurate instrument.

Reason (R): A voltmeter is always connected in parallel in a circuit.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

32. **Assertion (A):** Electric field is present in the vicinity of a current carrying wire.

Reason (R): The principle of conservation of charge is not followed, when charges are in motion.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

33. **Assertion (A):** In real battery total chemical energy lost in the battery can not be obtained at load resistance.

Reason (R): Two heaters with different resistance are connected in parallel. Higher resistance heater will glow more.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)

(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)

(3) (A) is true but (R) is false

(4) Both (A) and (R) are false

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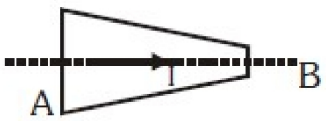
34. **Assertion (A):** Consider a current carrying wire whose cross section area decreases gradually along the direction of current, like as shown in figure. As one goes from cross-section A to cross-section B, the drift speed of electron increases.



Reason (R): Electric field intensity at any cross-section in a current carrying wire is inversely proportional to its cross sectional area.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

35. **Assertion (A):** Thick metallic strips are used to join wires in a potentiometer.
Reason (R): Metallic strips are used to provide mechanical support to potentiometer wires.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

36. **Assertion (A):** The emf of the driver cell in the potentiometer experiment should be greater than the e.m.f. of the cell to be determined.
Reason (R): The fall of potential drop across the potentiometer wire should be less than the e.m.f. of the cell to be determined.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

37. **Assertion (A):** The coil of a heater is cut into two equal halves and only one of them is used into heater. The heater will now require half the time to produce the same amount of heat.
Reason (R): The heat produced is directly proportional to the square of current.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

38. **Assertion (A):** The bending of an insulated wire increases the resistance of wire.
Reason (R): The drift velocity of electrons in bent wire decreases.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

39. **Assertion (A):** A potentiometer of longer length is used for accurate measurement.
Reason (R): The potential gradient for a potentiometer of longer length with a given source of e.m.f. becomes small.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

40. **Assertion (A):** The average thermal velocity of the electrons in the conductor is zero.
Reason (R): Direction of motion of electrons are randomly oriented.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

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41. **Assertion (A):** In series combination of electrical bulb, lower power bulb emits more light than that of higher power bulb.
Reason (R): The lower power bulb in series gets more current than the higher power bulb.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

42. **Assertion (A):** A galvanometer can be used as an ammeter only.
Reason (R): A galvanometer can be used in electric circuit to detect the electric current only.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

43. **Assertion (A):** The average thermal velocity of the electrons in a conductor is zero.
Reason (R): In the absence of an electric field, the electrons are at rest.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

44. **Assertion (A):** The resistivity of a semiconductor increases with temperature.
Reason (R): The atoms of a semiconductor vibrate with larger amplitude at higher temperature thereby increasing its resistivity.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

45. **Assertion (A):** The connecting wires are made of copper.
Reason (R): Copper is a superconductor at room temperature.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

46. **Assertion (A):** In a metallic conductor, current is due to free electrons moving in a definite direction.
Reason (R): A current carrying conductor is negatively charged.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

47. **Assertion (A):** Fuse wire should have low melting temperature and high resistivity.
Reason (R): Fuse saves an appliance from damage by increasing its current passing capacity.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

48. **Assertion (A):** As temperature of a metallic current carrying conductor is increased, its resistance increases.
Reason (R): Decrease of temperature results in decrease of electric field strength along the conductor so that current reduces.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

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49. **Assertion (A):** As a wire is stretched to four times its length, its resistivity becomes four times, such that resistance also increases.

Reason (R): $R = \frac{\rho A}{l}$ where symbols have their usual meaning.

(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

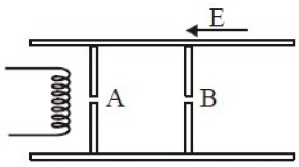
50. **Assertion (A):** Arrows indicating current in different branches of a circuit follow vector- addition laws.
Reason (R): Current is a scalar quantity but it adds like vector
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

51. **Assertion (A):** As temperature of an electrolyte is increased, its conductivity increases.
Reason (R): Increase of temperature makes the electrolyte less viscous.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

52. **Assertion (A):** Electric appliances with a metallic body have three pin connections whereas an electric bulb has two pin connections.
Reason (R): Three pin connection reduces heating of connecting cable.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

53. **Assertion (A):** The resistivity of a semiconductor decreases with increase in temperature.
Reason (R): In a conductor, the rate of collisions between free electrons and ions increases with increase of temperature.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

54. A filament emits electrons at a constant rate as shown in figure. The electrons are then subjected to a constant electric field.



The two stops ensure that the electron beam has a uniform cross-section.
Assertion (A): The speed of the electrons is greater at B than at A.
Reason (R): The current at cross-section B is greater than the current at A.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

55. **Assertion (A):** Terminal potential difference of a cell is always less than its emf.
Reason (R): Potential drop across internal resistance of cell increases terminal potential difference.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

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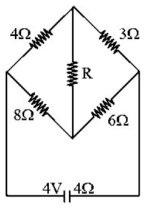
56. **Assertion (A):** A larger dry cell has higher emf.
Reason (R): The emf of a dry cell is proportional to its size.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

57. **Assertion (A):** A car battery is of 12 V. Eight dry cells of 1.5 V connected in series can give 12 V. Still such cells are not used in starting a car.
Reason (R): It is easier to start a car engine on a warm day than on a rainy day.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

58. **Assertion (A):** In the circuit of figure, maximum power transferred by the source of emf to the external circuit is 1 W.

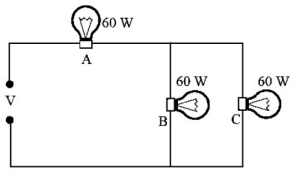


Reason (R): Maximum power is transferred when external resistance equals the internal resistance of the source.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

59. **Assertion (A):** When identical cells are connected in parallel to the external load, the effective emf increases.
Reason (R): All the cells will be sending unequal current to the external load in the same direction.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

60. **Assertion (A):** In balanced Wheatstone bridge, the current through cell depends on resistance of galvanometer.
Reason (R): At balanced condition current through galvanometer is non-zero.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

61. **Assertion (A):** In the shown circuit if lamp B or C fuses then brightness of lamp A decreases.



Reason (R): It is due to decrement in voltage on bulb A.
(1) Both (A) & (R) are true and the (R) is the correct explanation of the (A)
(2) Both (A) & (R) are true but the (R) is not the correct explanation of the (A)
(3) (A) is true but (R) is false
(4) Both (A) and (R) are false

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ANSWER KEY																				
Que.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Ans.	1	3	1	3	1	1	2	1	4	4	3	1	3	4	2	3	2	3	4	1
Que.	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
Ans.	4	3	3	1	1	1	3	3	3	4	2	4	3	1	2	3	2	4	1	1
Que.	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
Ans.	3	4	3	4	3	3	3	3	4	4	1	3	2	3	4	4	2	1	4	4
Que.	**61**																			
Ans.	1																			

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